

Schedule A to the Voluntary Amendment Dated September 27, 2002 on
Serial No. 10/049,675 from PCT/CA00/00981

Following is amended Claim 22 showing amendments:

~~22.~~ (Amended) An electric potential sensor for detecting an electrical potential difference present over a source surface comprising:

- (1) a voltage divider network including at one end a pick-up electrode with a face surface having an insulating layer positioned adjacent to said face surface for placement next to a source surface whose electrical field is to be sensed through capacitive coupling
- (2) an electrical coupling at the other end of the voltage divider network for connection to another portion of the source surface over which an electrical potential difference exists; and
- (3) voltage sensing means for providing a voltage output, said voltage sensing means having an input capacitance that forms a portion of the voltage divider network, the voltage sensing means being connected for measuring the voltage appearing across that portion of the voltage divider network provided by said input capacitance and for providing a voltage output that corresponds to the strength of said electrical potential difference

characterized in that the capacitance that can exist between the source surface and the voltage sensing means is sufficient so that, when the pickup electrode is placed adjacent the source surface, the change in the capacitive coupling between the voltage sensing means and the source surface arising from a change in the separation distance between the pickup electrode and said surface varies insensitively with displacement of the electrode towards or away from the surface whereby, upon variation of the separation distance between the source surface and the pick-up electrode, the overall, effective capacitance formed in use between said source surface and the voltage sensing means through the pick-up electrode is such that the change in capacitance is no greater than 50 percent when subjected to a 0.1 mm increase in said separation distance, and wherein the voltage sensing means has an input resistance that, when combined with the capacitance that can exist between the source surface and the voltage sensing means through the pick-up electrode, provides an RC filter with a low-frequency cut-off of at least 0.05 hertz.

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Following is the amended Claim 38 showing amendments:

38. (Amended) A method of sensing an electrical potential difference present over a surface comprising:

(1) presenting a pickup electrode to confront said surface and to establish a capacitive coupling to said surface and receive a signal based upon the electric field emanating therefrom;

(2) applying the signal so received to a voltage divider network which includes at one end the pick-up electrode and at another end an electrical coupling means connected to another portion of the surface over which an electrical potential difference exists, there being a high impedance amplifier with an input capacitance connected in series within said voltage divider network, the high impedance amplifier having an input resistance that, when combined with the capacitance that can exist between said surface and the high impedance amplifier through the pick-up electrode, provides an RC filter with a low-frequency cut-off of at least 0.05 hertz;

(3) maintaining the pickup electrode at a spaced separation from the confronted, field-emitting surface so that the overall effective capacitance between said surface and said amplifier has a value in the region of a plot of capacitance value versus separation distance wherein the percentage change in capacitance is no greater than 50 percent when subjected to a 0.1 mm increase in the separation distance occurring between the pick-up electrode and the confronted surface whereby a signal is provided to the amplifier to provide an amplifier output voltage that corresponds to the strength of said electrical potential difference, and wherein the capacitive coupling between the field-emitting surface and the amplifier through the pickup electrode varies insensitively with displacement of the electrode away from said surface.